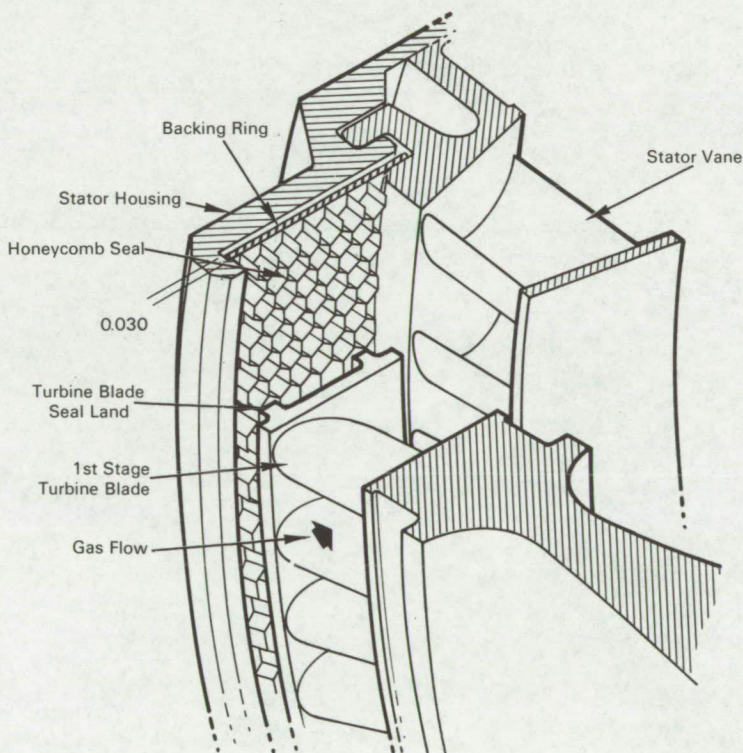


NASA TECH BRIEF



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Honeycomb Seal Backing Ring Increases Turbopump Disk Life



The problem:

In a certain fluid fuel turbopump application, the first stage turbine disk of the curvic drive configuration has experienced cracking due to shaft and wheel vibration.

The solution:

Installation of a thin (0.030-inch) relatively rigid metal backing ring to the stationary honeycomb seal.

The backing ring, being thermally compatible with the turbopump environment, and providing closer operating clearance between the turbine blade tip seal lands and the stationary honeycomb seal face, imposes a useful combination of aerodynamic and friction damping.

Notes:

1. First-stage disk cracking has been eliminated, by this modification, for the operating life of the fuel turbopump.

(continued overleaf)

2. Inquiries concerning this innovation may be directed to:

Technology Utilization Officer
Marshall Space Flight Center
Huntsville, Alabama 35812
Reference: B67-10607

Patent status:

No patent action is contemplated by NASA.

Source: W. S. Brooks and E. W. Larson
of North American Aviation, Inc.
under contract to
Marshall Space Flight Center
(MFS-13303)